

VideoSystem Grabster DV 200

English Manual

Version: 18.06.04

CE Declaration

We:

TerraTec Electronic GmbH, Herrenpfad 38, D-41334 Nettetal, Germany

hereby declare that the product:

VideoSystem Grabster DV 200,

to which this declaration refers is in compliance with the following standards or standardizing documents:

1. EN 55022

2. EN 55024

The following are the stipulated operating and environmental conditions for said compliance:

residential, business and commercial environments and small-company environments.

This declaration is based on:

Test report(s) of the EMC testing laboratory



The information in this document is subject to change without notice and shall not be deemed as a warranty by the seller. No warranties, express or implied, are made with regard to the quality, suitability or accuracy of this document. The manufacturer reserves the right to change the contents of this document and/or the associated products at any time without the provision of prior notice to specific persons or organizations. The manufacturer shall not be held liable for damages of any kind arising from the use, or the inability to use this product or its documentation, even if the possibility of such damage is known. The information in this document is subject to copyright. All rights are reserved. No part of this manual may be reproduced or transmitted in any form or for any purpose without the express written permission of the copyright holders. Product and brand names contained in this document are used for identification purposes only. All registered trademarks, product designations or brand names used in this document are the registered property of their respective owners.

©TerraTec® Electronic GmbH, 1994 - 2004. All rights reserved (18.06.04).

Contents

Preface4

Scope of delivery4

Installation4

 Card Diagram4

 Installing the Grabster DV 200 PCI card5

 Connecting a DV camcorder..... 6

 Connecting other FireWire™ devices 6

You're not alone...7

 Service at TerraTec. 9

Glossary 12

Preface

Thank you for choosing a TerraTec product. Congratulations on your decision to buy this sophisticated piece of state-of-the-art technology, the Grabster DV 200 PCI card. This is one of the most powerful PC products for video applications. We are convinced that the Grabster DV 200 PCI card will be both very useful and a lot of fun for you for a long time to come.

Scope of delivery

The scope of delivery includes at least the following:

- 1 Grabster DV, PCI-IEEE-1394 Controller
- 1 Software CD
- 1 IEEE-1394 connecting cable, 6-pin to 4-pin for connecting your camcorder
- 1 Registration card with the serial number
- Hardware and software manual

Please fill out and return the registration card to us at your earliest convenience or register online at <http://www.terratec.net/register.htm>. This is important for support and hotline services.

Installation

Card Diagram

The external IEEE-1394 connections



These ports let you connect the Grabster DV 200 PCI card to the outside world—to your camcorder, for example.

Installing the Grabster DV 200 PCI card

Start by making sure that nothing is missing.

Safety note:

Before opening the case, unplug the AC power cable from the wall socket as well as from the PC.



And here's what to do, step by step:

- Switch off your PC and all connected peripheral devices such as your printer and monitor. Leave the AC cable connected for the time being, so that your computer is still grounded.
- Touch the metal chassis at the rear of the PC to ground and to discharge static. Now unplug the cord from the AC socket.
- Remove the cover from the case of your PC.
- Find a free PCI slot, remove the screw securing the metal cover over the slot and remove the cover itself. For best results, choose a slot which is not immediately next to an existing card, if possible.
- Carefully remove the Grabster DV 200 PCI card from its packaging and pick it up by the edges with one hand while your other hand is resting on the metal of the PC case. This will ensure that your body is completely discharged via your computer without affecting the card. Do not touch the components of the card under any circumstances.
- Align the holder at the rear of the Grabster DV 200 PCI card in the expansion slot in such a way that the card's connectors are directly in line with the slot's socket.
- Carefully seat the card in the slot. You might have to press the card firmly into the slot to make a good contact. Take care to ensure that the contacts are precisely in line in order to avoid damaging the motherboard or the Grabster DV 200 PCI card in your PC.
- Insert and tighten the screw from the slot cover to secure the Grabster DV 200 PCI card in its slot.
- Boot the computer. The card will be installed automatically.

Connecting a DV camcorder



Your camcorder will have a socket labeled as “DV IN”, “DV IN / OUT” or “iLink™”. Connect the smaller plug of the FireWire™ cable to the socket of your camcorder and the larger one to your Grabster DV 200 PCI card.

Connecting other FireWire™ devices

In addition to DV camcorders, a whole range of FireWire™ devices can be used with the Grabster DV 200 PCI card. These include FireWire™ hard drives, CD-ROM and DVD drives, printers, and the like. Up to 63 devices can be connected and used at the same time.

Please refer to the documentation of the device when connecting FireWire™ devices other than camcorders.

You're not alone...

The following is a list of (hopefully) interesting links.

Links to camcorder manufacturers:

Canon

- Germany - <http://www.canon.de>
- UK - <http://www.canon.co.uk>
- France - <http://www.canon.fr>
- Italy - <http://www.canon.it>
- Spain - <http://www.canon.es>
- Netherlands - <http://www.canon.nl>

JVC

<http://www.jvc-europe.com/JvcCons/>

Panasonic

- Germany - <http://www.panasonic.de>
- UK - <http://www.panasonic.co.uk>
- France - <http://www.panasonic.fr>
- Italy - <http://www.panasonic.it>
- Spain - <http://www.panasonic.es>
- Netherlands - <http://www.panasonic.nl>

SONY

- Germany - <http://www.sony.de>
- UK - <http://www.sony.co.uk>
- France - <http://www.sony.fr>
- Italy - <http://www.sony.it>
- Spain - <http://www.sony.es>
- Netherlands - <http://www.sony.nl>

The following companies sell enablers for a variety of DV camcorders:

<http://www.como.com>

Germany

<http://www.dv-in.de>

<http://www.dvcut.de>

<http://www.hifivideofachversand.de>

<http://www.stonehead.de>

The Netherlands

<http://www.twintek.nl/dvwidget.html>

<http://enable.dvin.org/>

UK

<http://enable.dvin.org>

Service at TerraTec.

“Rien ne va plus—Nothing's working” can happen to the best systems. If this happens to you, the TerraTec team is happy to offer its service and support.

Hotline, Internet.

Your first move should be to check our website <http://www.terratec.com/> for current answers to frequently asked questions and the latest drivers.

If these options do not provide the necessary help, please contact our phone helpline or contact us online at <http://supporten.terratec.net/>. In either case, please have the following information handy:

- your registration number,
- this documentation,
- the manual of your motherboard, and
- a screen shot of your BIOS configuration (if possible).

In addition, it would be helpful to our technicians if you are at your computer during the phone call so that you can carry out our tips and tricks directly. Please do not forget to write down the name of the respective support technician if you contact our Support Team. You will need this name if a defect is present and your card needs to be mailed to us.

Broken?!

Before you send your card back, be sure to contact us! Make a note of the name of your support contact and follow these simple instructions:

- Please fill out the service request form provided with your card clearly and completely. The more clearly and detailed you describe the problem, the faster we will be able to help. Cards sent in without a description of the problem cannot be processed and will be returned to you at your expense.
- Be sure to include a copy of your purchase receipt (not the original) with the package. If we do not receive a copy of a receipt, we will assume that the warranty for the product has expired and will bill you for the repair.
- Please use a sufficiently strong and padded mailing package. We recommend using the original package. Remember that the card is a sensitive electronic component.
- Be sure to include enough postage—we will cover for the postage for the return to you.

General terms and conditions of service

1. General

By purchasing and receiving the goods, you accept our general terms and conditions of service.

2. Proof of guarantee

You will require a copy of the purchase receipt or delivery slip as proof of warranty. If you do not supply proof of warranty, we will charge for repairing the goods.

3. Description of problem

Shipments that do not include a description of the fault or an insufficient description ('defective' or 'for repair' is insufficient) will be returned for a processing fee, because this makes repair more difficult and could have been avoided.

4. Invalid returns

In the event of an unfounded complaint (no fault could be detected, probable operating error), we will return the goods and a processing fee will be charged.

5. Package

If possible, please use the original packaging for return shipment. Any warranty claim will be jeopardized by improper packaging. The warranty will not apply to damage caused by improper packaging.

6. Foreign manufactured products

Devices that are not manufactured or distributed by TerraTec Electronic GmbH will be returned and a processing fee will be charged.

7. Repairs liable to your expense

Repairs out of the warranty period are liable to your expense.

8. Transportation costs

The dispatcher pays all costs associated with shipping and insurance for the goods for repair to TerraTec Electronic GmbH. If the goods are covered by warranty, TerraTec Electronic GmbH will pay the shipping costs for returning repaired goods. COD shipments will not be accepted for organizational reasons.

9. Final regulation

TerraTec Electronic GmbH reserves the right to change or supplement the general terms and conditions of service at any time.

Otherwise the General Terms and Conditions of Business of TerraTec Electronic GmbH are considered to be accepted.

Glossary

AVI—A Windows video format.

Bit rate—The bit rate indicates the volume of the data stream per second. A higher bit rate results in higher quality. A distinction is made between constant bit rates (e.g. for → VCD) and variable bit rates, e.g. for → SVCD and → DVD. Unlike constant bit rates, variable bit rates adjust the size of the data stream according to the video material.

Blue screen—A variation of → Chroma keying.

Capture—Recording.

Chroma keying —Chroma keying uses a surface with a single color in front of which an actor, for example, is filmed. This color area is then made transparent during subsequent editing and can be replaced by a different background.

Chrominance—Chrominance refers to the color signal in → YUV, which is comprised of two color components: U, the balance between red and cyan, and V, the balance between yellow and blue.

Clip—A short piece of video material.

Composite video—Composite video is a transmission method common in the consumer sector that is generally realized using cinch connectors and which is frequently used, for example, on TVs. In this process, all signals (chrominance and luminance) share a single cable. The quality of composite video is lower than that of → S video, in which chrominance and luminance are transferred separately.

CPU—Central processing unit. The part of your computer (processor, e.g. Pentium or Athlon), that does the actual computing.

D8—Digital 8 is the successor to the Hi8 and VHS-C camcorder formats. Hi8 or D8 cassettes are still used, but the video data is recorded digitally in DV format.

Data throughput—see Data transfer rate

Data transfer rate—The data transfer rate describes the speed at which a hard drive can read or write data over a sustained period. The data transfer rate is usually measured in seconds, e.g. 7 Mbps.

Device control—In DV terms, this refers to the ability to control your camcorder from your PC.

DirectDraw—DirectDraw is a graphics standard initiated by Microsoft. Its features include the capability to write graphics data directly to the memory of the graphics board for the fluid display of video material.

Dropped frames—These are individual images missing from the video data stream, usually due to a slow hard drive.

DVD—abbreviation for Digital Versatile Disk. The diameter of a DVD is the same as that of a CD-ROM. Storage capacities of 4.7 GB (DVD-5) to 17 GB (DVD-18) and data rates between 600 and 1300 KBps are currently specified. In addition, distinctions are made between a variety of formats such as DVD Video, DVD Audio, DVD-ROM, DVD-R, DVD-RW and DVD-RAM.

DV—DV stands for Digital Video. The DV standard uses a compression rate of 5:1. This corresponds to a data rate of 3.125 Mbps, which can be handled by virtually any modern hard drive. The quality of the DV standard is very high; it is therefore frequently used in professional productions. A number of different cassette types exist in the DV sector, which vary in size and maximum playing time, but which are compatible with one another in terms of video data. MiniDV is designed for the consumer sector and supports playing times of up to one hour. The DV format used in the professional sector supports playing times of up to three hours.

DV-In—Usually, the DV jack of a camcorder can transport video data in both directions— to and from the camcorder. Many camcorders in Europe do not feature DV-In, however. Also see - > Enabling.

Enabling—Due to European import duties, imported digital video recorders are more expensive than imported digital video playback devices. For this reason, manufacturers of camcorders have begun to modify their products for the European market and to disable the digital input -> DV-In. Needless to say, clever developers found a way around this restriction very quickly. This is known as “enabling”. Enabling the DV camcorder is a precondition for sending video material back to the camcorder. Enablers are available for almost all camcorders and can be purchased freely.

Fading—Fades are soft transitions, often involving special effects, from one clip to the next.

Fields—Rather than displaying 25 frames per second (as per the PAL standard), 50 fields are displayed per second to reduce TV display flicker. These fields consist of either the odd-numbered rows (these are sent first) or the even rows of the image being displayed.

FireWire™—Apple's name for -> IEEE-1394.

Frame rate—The number of frames within a given period of time. The frame rate is frequently stated in frames per second (FPS).

Hi8—Analog video recording system that separates color and brightness information, thus offering quality better than that of VHS-C, for example.

Hosiden connector—a small connector with four conductors used for → S video signals.

IEEE-1394—This is a universal bus system originally developed by Apple for digital data communications. The devices are connected by cables with a maximum length of 4.5 m. The system supports transfer rates of up to 400 Mbps. However, a standard has not been established for video data due to the lack of specifications for the format of video data using this bus. Sony got down to brass tacks and closed this gap by installing FireWire™ sockets in its digital camcorders and developing its own protocol. Thanks to FireWire™ and the Sony protocol, the dream of loss-free video editing has finally come true.

iLink —Sony's name for → IEEE-1394.

Interlacing—see Fields.

Linear editing—The origins of linear video editing date back to analog video. The original video data is generally present in the same sequence as the edited video clips. A simple form of linear video editing would be to copy material from an analog video camera to a VCR and discard a number of clips in the process. However, if you would like to insert a new clip in the middle, it would be necessary to copy all of the following clips again.

Luma keying—Unlike chroma keying, the transparency of the video is determined on the basis of brightness in luma keying.

Luminance—Luminance refers to brightness in → YUV. (Y).

Main memory—see RAM

MiniDVD—This is a process in which → DVD data, including the DVD directory structure and navigation menu, is burned onto a blank conventional CD. Due to their lower capacity, MiniDVDs can only store around 18 minutes of video data. Unfortunately, not many DVD players can play MiniDVDs, making them mainly suitable for PC playback.

MiniDV—The consumer version of the DV format. Also see → DV.

MJPEG—Motion JPEG is a compression process in which every single frame in the video data stream is compressed individually.

MPEG—The Motion Picture Experts Group is a consortium of leading manufacturers and developers of video technology that determines new standards such as MPEG-1 or MPEG-2.

Nonlinear editing—Unlike → linear editing, individual clips can be edited without affecting subsequent clips. For example, with nonlinear editing, you can shorten or remove a clip at the beginning of a video project without having to edit the following clips as a result.

NTSC—NTSC is a video standard used in the USA and Japan. NTSC has a higher frame rate than PAL (30 frames or 60 → fields per second), but a lower resolution (525 rows, with 480 visible). Color depiction in NTSC is realized in → YIQ.

PAL—This is the most common video standard in Europe. PAL displays 25 frames (or 50 → fields) per second and has a resolution of 625 rows, of which 576 are visible. Color depiction in PAL is realized in → YUV.

Preview—The preview offers you a quick overview of your work. The final quality is normally considerably higher than that of the preview.

RAM—Random Access Memory is the main memory of your PC. Since video editing with effects is very memory-intensive, the old rule applies: you can never have enough RAM!

Rendering—this refers to the processing of video or audio clips after an editing operation has been completed, for example after the application of an effect or filter.

RGB color space—In the RGB color space, each visible pixel is made up of the three components R(ed), G(reen) and B(lue). To achieve the natural display of colors on a computer, each of these components must have at least 256 values. This corresponds to exactly one byte for each color component. A single complete video image would thus require 768 pixels x 576 pixels x 3 bytes = 1,327,104 bytes. This corresponds to around 1.2 MB per frame! One second of video in the RGB color space would therefore require around 31.6 MB of storage space. Using this process, a 2 GB hard drive would have a video capacity of around one minute. No current hard drive can deliver this volume of data in real time, but a number of options are available to reduce the data volume of the video signal substantially through transformation to a different color space (usually YUV) and compression (usually MJPEG).

S video—Unlike → composite video, chrominance and luminance are transmitted separately in S video, resulting in higher quality.

Saturation—Describes the ratio of color in the picture.

Storyboard—Unlike the → timeline, the storyboard offers a thematic overview of your video project. Individual scenes can be identified easily, but it does not deliver a sense of the actual length of the project.

SVCD—Abbreviation for Super Video CD. SVCDs are similar to → VCDs, but they have a great advantage in that their data is in MPEG-2 format with a → variable bit rate. In addition, the resolution of 480 x 576 pixels is higher than that of the VCD. An SVCD generally can contain

45-50 minutes of video material. The bit rate (audio and video) of an SVCD may not exceed 2.6 Mbps. SVCDs can be viewed using many standalone DVD players.

Timeline—The timeline is the time axis upon which you position and edit your video clips.

Transition—see Fading.

Trimming—This refers to adjusting the length of a video clip at the beginning and/or end.

VCD—Abbreviation for Video CD. The Video CD has a PAL resolution of 352 X 288 pixels and stores audio and video data in MPEG-1 format. VCDs use a constant bit rate of 1.15 Mbps for video and 224 kbps for audio data. VCDs can be viewed in virtually any DVD player.

Video filter—Video filters let you influence your video material in a wide range of ways. For example, you can manipulate the colors of your video film or use complex filters to degrade your new, top-quality film to look like an old, silent movie.

Video for Windows—This is an old, but still commonly used, video concept for Windows.

YIQ—YIQ is a color space related to YUV. It is also characterized by a brightness component -> luminance (Y), but also by different color components, I (cyan-orange balance) and Q (magenta-green balance). YIQ is used for NTSC, for example.

YUV—YUV is the designation for a color space characterized by a brightness component -> luminance (Y) and two color components -> chrominance (U, V).